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Outlook of logging perspectives in the Czech Republic for the period 2013–2032

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ABSTRACT: The aim of the submitted work was to analyze the outlook of logging perspectives in the next two decades (2013–2032) for all forests in the territory of the Czech Republic. The analyses made use of the national database of forest management plans and guidelines. For the purpose of these analyses, the forests were divided into commercially exploitable forests and forests commercially exploitable with restrictions. The latter ones included protection forests and the category of special purpose forests, i.e. 31c – forests in the territory of national parks and national nature reserves, and 32a – forests occurring in the first zones of protected landscape areas, and forests occurring in nature preserves and nature monuments. In addition to the potential total volume of timber logging, perspectives were studied separately for coniferous and broadleaved tree species as well as for individual main tree species. The derived model mean annual cut of 15.51 mil. m^3 corresponds to the current timber production in the Czech Republic. Results of the analyses indicate that reduced logging of coniferous, namely spruce, timber is to be expected in the next twenty years.

Keywords: Czech forests; forest management plans and guidelines; grading

Outlooks of logging perspectives in forests occurring in the Czech Republic were drawn several times in the past for various prediction times. One of the first publications dealing with the topic was Forest Inventory issued in 1950. The inventory, conducted in 1948 and 1953, was based on forest management plans and included all forests in Bohemia and Moravia sized above 10 ha, i.e. 2,195,440 ha of forestland (Lesprojekt 1958). A considerable part of these forests (ca 450,000 ha) did not have management plans at that time, which were prepared only during the inventory process. The inventory resulted in summary sheets for individual administrative regions about the condition of forests and logging perspectives for the next ten years.

A subsequent inventory for planning forest management was performed in 1960 based again on forest management plans and their reviews, results of management records and direct surveys in the forest. In the territory of the Czech Republic, field surveys were conducted on 76% of the total forestland area. Primary units of the forest inventory were forest enterprises for which logging perspectives were derived for the period from 1961 to 1965 (Mzlvh 1960).

In addition to the forest inventories, comprehensive forest management plans were introduced in 1978 based on the new legislation, which were further prepared in five-year cycles. An integral part of the comprehensive forest management plans was information on logging volumes and future logging prospects. Nymburský (1983) published logging perspectives until 2020 that were drawn in 1978 (Table 1). The author informs "In the sense of legal regulations in force, logging perspectives are to be specified at all times two years before the beginning of the Five-Year Plan of national economy. This indicates that further outlooks will be prepared in 1983 and the next ones in 1988."

Outlooks of logging perspectives from the year 1988 were then published in the Green Report 1994, being conceived according to management sets in individual forest management units for the next 15 years until 2010 (Table 2).

Based on a request of the Ministry of Agriculture, Forest Management Institute in Brandýs nad

Table 1. Logging perspectives for the period 1980–2020 (in mil. m^3 of timber to the top of 7 cm under bark) (FMI 1978)

Tree species	Forest inventory 1980	Logging perspectives			
		1990	2000	2010	2020
Conifers	10.668	11.320	11.294	11.324	11.359
Broadleaves	1.593	1.431	1.487	1.524	1.555
Total	12.261	12.751	12.781	12.848	12.914
Indices as of 1980	100.0	104.0	104.2	104.8	105.3

Labem (FMI) prepared and published the study in 2006: "Logging perspectives of forests in the territory of the Czech Republic" (Vašíček et al. 2006). In this study, the development of logging perspectives until 2065 was modelled based on the database of forest management plans and guidelines with effect from 1 January 2005. Tests were carried out of the effect of reduced rotation period in selected management sets, increased volume of tending measures up to 40 years, a combination of these two factors, and the use of the growing stock from the first cycle of the whole-scale statistical National Forest Inventory (National Forest Inventory in the Czech Republic 2001–2004). The regulated annual allowable cut calculated from the model logging percentages for the period 2005–2065 amounted to 13.52 mil. m^3 for the basic option. Results for all selected options are presented in Table 3.

Outlooks of logging perspectives are also commonly drawn in the majority of other European countries. Moravčík et al. (2007) presented a prognosis for the development of total logging volumes in the territory of the Slovak Republic until the year 2020. For the territory of Great Britain, a publication "Wood fibre availability and demand in Britain 2007 to 2025" (ConFor 2010) was issued. Outlooks of potential logging perspectives relating to up-to-date results of periodical or permanent national forest inventories for Norway were published by Antón-Fernández and Astrup (2012), for Finland by Nuutinen et al. (2009) and Hetemäki and Hänninen (2012), for Austria by Schadauer and Neumann (2008), and outlooks for Germany are available on websites of the Federal Ministry for Nutrition and Agriculture (Bundeswaldinventur 2005). Verkerk et al. (2011) estimated the potential wood biomass supply for the period 2010–2030 in the European Union and took into account multiple environmental, technical and social constraints. In the latest work Verkerk et al. (2014) assessed to what extent forests are currently protected and how felling restrictions affect the potential annual wood supply within the 27 European Union member states, Norway, and Switzerland. Schwarzbauer et al. (2013) evaluated potential wood biomass availability in Austria and the possibility of a scarcity due to the reduction of forest areas available for wood supply.

In October 2011, the European Forest Sector Outlook Study II (EFSOS II) (United Nations 2011) was published, predicting the development of forest and wood-processing sector for the period 2010–2030 both from the viewpoint of future timber resources and from the viewpoint of timber consumption and trading. This was the last in the series of studies issued by the Forestry and Timber Section of the United Nations Economic Commission for Europe (UNECE/FAO), the aim of which is to forecast possible or probable development of the forest and wood-processing sector on the basis of analyzing former trends. For the first time in history, results were publicized for individual countries. Logging perspectives were modelled by using the EFISCEN tool, for which FMI in Brandýs nad Labem provided data on standing volumes and area sizes from the first National Forest Inventory (NFI) cycle, aggregated according to administrative regions, ownership, ecological series, groups of tree species and age classes. Data on increments were provided from the database of forest management plans and guidelines because the evaluation of NFI increment data will be possible only after the end of the second NFI cycle in 2015.

Table 2. Logging perspectives for the period 1991–2010 (mil. m^3 of timber to the top of 7 cm under bark) (FMI 1988)

Statistics	Logging perspectives			
	1991–1995	1996–2000	2001–2005	2006–2010
Total logging	59.447	59.035	58.776	56.900
Annual mean	11.889	11.807	11.775	11.380

Table 3. Logging perspectives for the period 2005–2065 (FMI 2006)

Option	Annual regulated allowable cut (mil. m^3 of timber to the top of 7 cm under bark)
Basic option	13.520
Advance felling increased by 20%	14.130
Reduced rotation period in selected management sets	13.770
Combination of advance felling increased by 20% and reduced rotation period in selected management sets	14.330
Enhanced logging perspectives by using National Forest Inventory data	18.650

Apart from the primary scenario, four other possible scenarios were defined for the future development of economic policy in the particular European countries. Both development of the main indicators of forest resources (area size, increment, felling volumes, tending measures) and development of economic indicators (production, consumption, trade) were modelled. All scenarios were assessed for their sustainability by using pan-European criteria and indicators of sustainable forest management. Hypothetical logging perspectives for three main scenarios in the Czech Republic are presented in Table 4.

Linking up with the European outlook study, Jonsson et al. (2011) drew a separate outlook study for Sweden.

Logging perspectives have also been worked out for determination of potential wood biomass which will be available for energy production (Smeets, Faaij 2007; Sirgmets et al. 2012; Pekka et al. 2014).

MATERIAL AND METHODS

The potential allowable cut for the predicted period 2013–2032 was derived from the current database of forest management plans and guidelines according to the methodology for deriving logging perspectives (Vašíček et al. 2006). The average age of the forest management plans and guidelines in the database is 5 years.

The forests were classified into forests commercially exploitable and forests commercially exploitable with restrictions. The forests commercially exploitable with restrictions comprised all protection forests and selected categories of special-purpose forests (1st zones of national parks, 1st zones of protected landscape areas and small-scale strictly protected areas). Other forests were classified as commercially exploitable.

Outlooks of logging perspectives were calculated for each tree species in the storey separately in the following steps:

– The principal felling volume is ascertained according to the exploitation percent;
– The felling area is ascertained according to the exploitation percent;
– Should the exploitation percent be zero, a thinning volume will be calculated from the thinning percent;
– The age of the storey will be increased by 10 years;
– The area of the storey will be decreased by the felling area;
– A new storey of the first age class will be established with the size equal to the felling area and will be included in regenerated parts of the stand;
– The new storey of the first age class features the same stocking and species representation as the regenerated stand;
– The standing volume will be decreased by the volume of the main felling;
– The standing volume will be increased by the increment coefficient derived from the growth tables.

In order to determine stocking during the transition to the next decade, the average stocking was calculated every year for individual age classes on a national scale. The new stocking of the stand was

Table 4. Outlooks of logging perspectives in the Czech Republic for 2010–2030 and some scenarios according to EFSOS II (United Nations 2011)

Scenario	Logging perspectives in CR – annual allowable cut (mil. m^3 of timber to the top of 7 cm under bark)				
	2010	2015	2020	2025	2030
Reference scenario	18.469	20.050	20.532	20.318	19.057
Promoting wood energy	18.469	20.039	20.738	20.576	19.301
Priority to biodiversity	18.469	19.242	16.809	16.767	16.718

Table 5. Model allowable cut for the commercially exploitable forests (in m^3)

Decade	Felling		Allowable cut	
	regeneration	improvement	decennial	annual
2013–2022	144,224,838	25,626,587	169,851,425	16,985,142
2023–2032	111,222,772	29,079,895	140,302,666	14,030,267
Average	127,723,805	27,353,241	155,077,046	15,507,705

determined on the basis of comparing the trend of the fitted curve of average stocking in age classes with the original stocking of the stand (serving as an initial point of the new curve). For the newly emerged stands of the first age class, the stocking was generally determined as full (10).

To calculate the intensity of thinning measures in stands with stocking greater than 10, an extrapolation was made of the thinning percent stipulated by Decree No. 84/1996 Coll. issued by the Ministry of Agriculture. Logging perspectives of over-matured stands (over-matured according to management sets) were calculated separately with the beginning of regeneration being shifted into the current decade and the regeneration period remaining unchanged.

The derived model mean annual cut was further analyzed from the viewpoint of the anticipated felling of coniferous and broadleaved tree species and some most important individual tree species. Potential timber supplies were derived based on the model grading according to Simanov (2007).

The grading is based on the mean diameter and on the expected quality (damage by rot, knottiness, stem curvature, stem continuity). The analysis included all tree species at standard quality. In coniferous tree species, this quality class is characterized as "straight, healthy stems of average technological standard, without rot". In broadleaved tree species this quality class is characterized as "straight, healthy stems of average technological standard including timber of branches above 7 cm in diameter, with the continuous stem above ½ of the tree height."

In the valid database of forest management plans and guidelines, we directly used the values stipulated for the individual tree species. In outlooks for future decades, a model mean diameter was used derived from the growth tables. For the purposes of the outlook study, the grading was simplified into three assortments: round wood, pulpwood and fuel wood. In broadleaves, no differentiation was made of fuel wood and pulpwood but a total volume is specified instead.

RESULTS AND DISCUSSION

The model allowable cut for the forests commercially exploitable and for the forests commercially exploitable with restrictions is presented in Tables 5 and 6, respectively.

The model allowable cut for the next two decades in the forests commercially exploitable with restrictions at an annual amount of 0.87 mil. m^3 (Table 6) is not commented upon in the text below since its practical commercial applicability is improbable.

At the European level Verkerk et al. (2014) stated that 73 million m^3 of wood cannot be felled from the protected forests. It is about 10% of the annual theoretical potential supply from the total forest area.

Based on results presented in Table 5 it is possible to state that the mean annual potential allowable cut for the commercially exploitable forests is 15.51 mil. m^3 for the next two decades. The amount of the allowable cut corresponds with the total felling realized in the last two years (2011/15.38 mil. m^3 and 2012/15.06 mil. m^3). However, the equable total felling amounts in the last two years resulted also from the low proportion of incidental felling. The share of incidental felling in the total felling volume in 2012 and 2011 amounted to 22% and 25%, respectively, these shares of incidental felling being the lowest ones in the last ten years.

Comparing the derived model mean annual cut with the long-term statistics of total felling vol-

Table 6. Model allowable cut for the forests commercially exploitable with restrictions (categories 21a, 21b, 21c, 31c, 32a) (in m^3)

Decade	Felling		Allowable cut	
	regeneration	improvement	decennial	annual
2013–2022	7,978,845	1,479,999	9,458,844	945,884
2023–2032	6,296,269	1,645,797	7,942,065	794,207
Average	7,137,557	1,562,898	8,700,455	870,045

Table 7. Timber logging according to tree species in 2000–2012 and 2013–2032

Year	Felling volumes according to tree species (1,000 per m^3)									
	spruce	pine	fir	larch	Douglas fir	beech	oak	maple	ash	lime
2000	10,452	1,871	61	455	12	663	395	28	73	63
2001	10,373	1,769	62	466	10	768	398	30	70	60
2002	10,643	1,815	63	478	11	694	360	27	63	55
2003	11,869	1,269	59	446	15	667	369	26	68	49
2004	11,910	1,507	80	411	10	866	360	28	69	48
2005	11,698	1,658	82	430	13	801	375	28	70	53
2006	13,028	2,571	80	423	15	709	396	28	69	55
2007	15,729	1,166	93	271	16	568	306	17	62	40
2008	12,968	1,411	58	422	15	574	336	23	70	55
2009	12,170	1,383	68	407	17	637	369	25	75	56
2010	12,299	2,083	79	585	19	812	386	30	69	62
2011	10,785	1,900	92	540	23	1,010	434	44	99	77
2012	10,487	1,899	105	537	28	887	477	45	88	82
2013–2022	10,399	2,895	262	679	30	1,084	616	86	137	119
2023–2032	8,756	2,126	177	598	31	862	542	86	126	110
Average 2013–2032	9,578	2,511	220	639	31	973	579	86	132	115

umes, this model allowable cut is lower only by 0.23 mil. m^3 than the mean total felling volume for the period 2000–2012 (15.74 mil. m^3), which includes a record felling amount from 2007, essentially affected by the incidental felling after the Kyrill storm gale. Comparing this with the mean total felling amount in the period 2008–2012 (15.77 mil. m^3), the difference is slightly higher – by 0.26 mil. m^3. Considering the accuracy of establishing the total felling amount worked out from data provided by large forest owners covering ca 75% of the forestland area, the difference is negligible.

For comparison with other countries we can use EFSOS II results (European Forest Sector Outlook Study II) (United Nations 2011) which were worked out using EFISCEN model. A decrease in potential felling is predicted for Germany, Czech Republic and Estonia in 2030, for Poland from 2025 and for the Slovak Republic from 2020 according to EFSOS II results (United Nations 2011) for particular countries. France, Austria, Norway, Sweden and United Kingdom are able to gradually increase potential felling volumes from 2010 to 2030.

The derived mean annual potential allowable cut was further analyzed from the viewpoint of the potential felling volume of hardwood and softwood, and for the most important selected tree species. Between the first and the second decade, a marked drop occurred in the annual potential felling volume of softwood from 14.3 mil. m^3 to 11.7 mil. m^3. If we presume a greater felling equability in the two decades and use a mean value, we shall obtain an annual potential felling volume of softwood at 13.02 mil. m^3. This value corresponds to the felling volume of softwood in the years 2011 and 2012, when the proportion of incidental felling was low. However, comparing this potential volume with the mean felling volumes of softwood in the period 2000–2012 as well as with the average of the last five years (2008–2012), it is lower by 1.12 mil. m^3 and 1.06 mil. m^3, resp., than the actually felled volumes of softwood (Fig. 1). The difference is given primarily by the amount of incidental felling in the past years.

The situation is opposite in the potential felling volume of hardwood. Between the first and the second decade, the annual potential felling volumes are only slightly reduced from 2.7 mil. m^3 to 2.3 mil. m^3. The mean annual potential felling volume of hardwood amounts to 2.5 mil. m^3. As compared with the supplies in 2000–2012, when the highest amount of the supplied hardwood reached 2.04 mil. m^3, this amount is conspicuously greater.

If we compare the potential timber felling according to the individual tree species (Table 7) with the long-term statistics, we might expect a considerable decrease in the main commercial species – spruce. Regarding the particular decades, the first decade would have spruce felling volumes at a level of the year 2012. However, in the next decade, a marked decrease by up to 1.6 mil. m^3 would occur in potential annual spruce felling volumes. In case that we would consider equable felling volumes in the

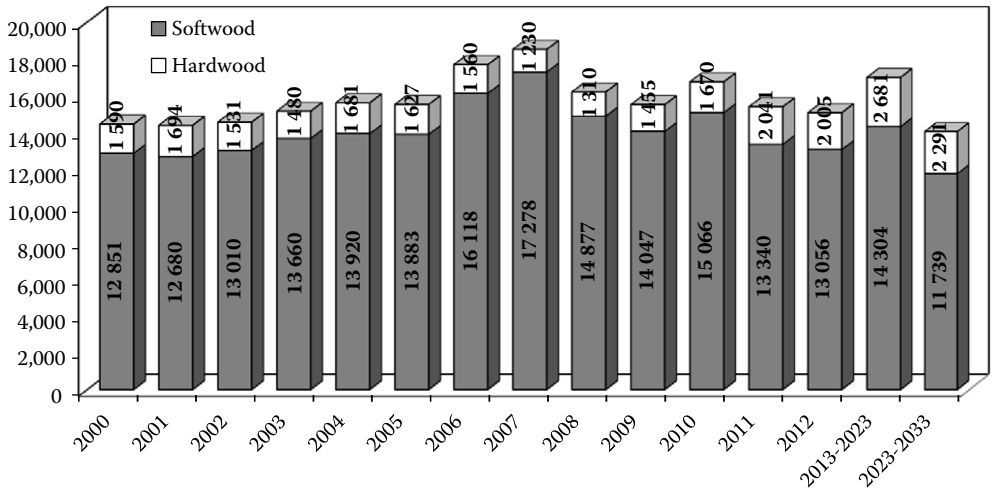

Fig. 1. Development of timber logging in 2000–2012 and 2013–2032 (in thousands m^3)

two decades, we would have to count with an annual drop by 0.9 mil. m^3 as compared with the year 2012. The equability of spruce felling volumes in the subsequent decades will be most affected by the development of incidental felling when in the case of unfavourable development in the first decade, a drop of potential felling amounts in the next decade can be assumed. In the other studied tree species, a balanced felling volume is to be anticipated in beech based on the long-term consumption, and increased potential felling volumes are to be expected in pine, fir, Douglas fir, larch, oak, maple, ash and lime.

The potential timber felling according to the individual tree species is rarely available for another countries. As an example we can mention Germany, where it is predicted that the potential felling volume of spruce can increase from 24.305 mil. m^3 in 2003 to 35.326 mil. m^3 in 2042 (Bundeswaldinventur 2005).

The potential timber supplies were at first derived by using the model grading according to Simanov (2007). The survey includes only the main tree species. We subsequently compared the results with the past long-term statistics of timber supplies and the analysis of potential timber supplies comes to markedly higher shares of round wood assortments. In conifers, an average proportion of round wood for the first decade comes up to 86% while data published by the Czech Statistical Office (CSO) in cooperation with the Ministry of Agriculture (MoA) give an average share of coniferous round wood for the period 2002–2012 only 59%. The difference is 27%. The difference is even greater in the broadleaved tree species (40%). An average share of round wood for the first decade comes out to 75% while data published by CSO in cooperation with MoA give an average proportion of broadleaved round wood for the period 2002–2012 only 35%.

In the coniferous tree species, the greatest part of this difference can be attributed to rot affecting the grading of the lower, most valuable, part of the stem. The occurrence of rot and damage to trees, and hence the related assumed decrease in the proportion of round wood was corroborated also by NFI (National Forest Inventory in the Czech Republic 2001–2004) results showing that 19% of individual trees were damaged by rot, 10% by felling and skidding operations and 11% by bark scaling or winter stripping. In the broadleaved tree species, the greatest part of the difference can be attributed to a lack of processing capacities for broadleaved round wood in the Czech Republic, increasing prices of pulpwood and fuel wood and occurrence of beech false heartwood.

In order to estimate timber assortment supplies in the next two decades (Table 8) more realistical-

Table 8. Potential timber supplies by assortments in 2013–2032 (in million per $m^3 \cdot yr^{-1}$)

Assortment	2013–2022	2023–2032	Average
Round wood	9.404	7.749	8.577
Coniferous	8.490	6.967	7.728
Broadleaved	915	782	848
Pulpwood and other industrial	5.275	4.353	4.814
Coniferous	4.570	3.751	4.160
Broadleaved	705	602	654
Fuel wood	2.306	1.928	2.117
Coniferous	1.244	1.021	1.133
Broadleaved	1.061	907	984
Total	16.985	14.030	15.508
Coniferous	14.304	11.739	13.022
Broadleaved	2.681	2.291	2.486

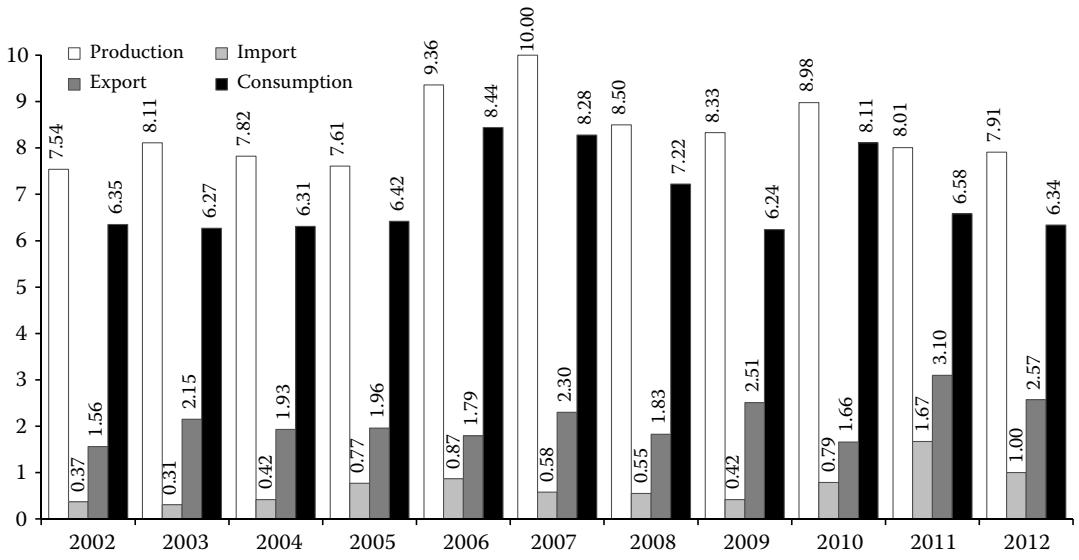

Fig. 2. Development of the consumption of coniferous round wood in 2002–2012 (Ministry of Agriculture of the Czech Republic 2003–2013)

ly, data on the potential coniferous and broadleaved felling volumes were used from the model of FMI in Brandýs nad Labem and from the average shares of individual assortments according to the CSO and MoA statistics for the last five years 2008–2012. The data for the last five years were selected with regard to the trend when the volume of pulpwood is decreasing in favour of fuel wood, and an assumption exists that the pulpwood supplies would further stagnate or slowly decrease. For the conifers the percentage share of 59.4% for round wood and 32.0% for pulpwood was finally used. For the broadleaves the percentage share of 34.1% for round wood and 26.3% for pulpwood was finally used.

If we compare the used percentage shares of round wood with other countries according to Eurostat data, we get the following results: Germany (63%), Estonia (62%), France (60%), Ireland (60%), Lithuania (60%) and United States (59%) comparable average share of coniferous round wood in the period 2008–2012. Canada (91%), Croatia (78%), Romania (79%), Switzerland (78%), Portugal (68%), Slovenia (77%), Slovak Republic (68%) and Austria (65%) reported a significantly higher average share of coniferous round wood in the same period than the Czech Republic. If we compared the average share of broadleaved round wood, the Czech Republic would be with 34% at the seventh place in the period 2008–2012. A higher average share of broadleaved round wood was reported by Croatia (47%), Romania (46%), Lithuania (41%), Latvia (39%), Slovak Republic (39%) and Cyprus (37%).

The expected mean annual supply of coniferous round wood in 2013–2032 amounts to 7.73 mil. m^3, which is less by 0.65 mil. m^3 than the long-term average calculated for the period from 2002 to 2012 (8.38 mil. m^3). However, compared with the average domestic consumption in the period 2002–2012, which amounts to 6.96 mil. m^3 (Fig. 2), the presented amount of round wood is higher by 0.77 mil. m^3. At the same time, it should be pointed out that in three years (in 2006, when the felling volumes were increased in state forests, and in 2007 and 2010, when the supplies of wind-thrown timber onto the domestic market were increased), the domestic consumption was higher than the predicted supplies of coniferous round wood for the other two decades and ranged above 8 mil. m^3.

The mean annual potential supplies of the coniferous pulpwood are derived at 4.16 mil. m^3, which is less than the long-term average of domestic production in 2002–2012 (4.86 mil. m^3) and at the same time, the volume is even lower than the average consumption in 2002–2012 (4.43 mil. m^3). Nevertheless, due to the decreased pulpwood consumption in recent years, the amount is higher than the long-term average of domestic consumption in 2008–2012, which amounted to 3.98 mil. m^3 (Fig. 3).

The domestic production and consumption of broadleaved round wood and pulpwood are stable over a long term. In the period 2002–2012, the average production of broadleaved round wood and its average consumption amounted to 0.55 mil. m^3 and 0.50 mil. m^3, respectively (Fig. 4). This indicates that the anticipated mean annual supply of broadleaved round wood in 2013–2032 (0.85 mil. m^3) is much higher than the long-term production and consumption.

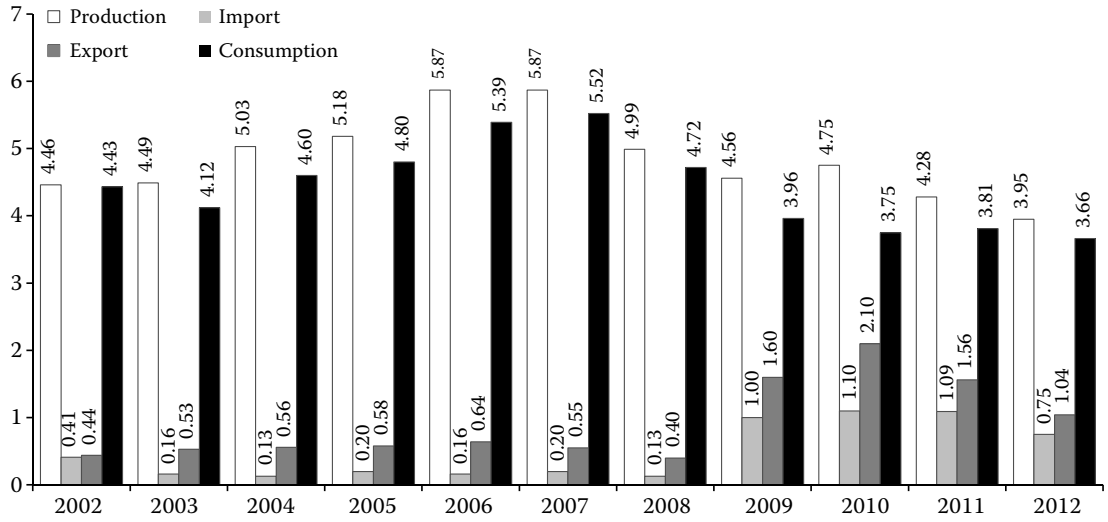

Fig. 3. Development of the consumption of coniferous pulpwood in 2002–2012 (Ministry of Agriculture of the Czech Republic rok 2003–2013)

A similar situation is with the broadleaved pulpwood, the mean annual production of which was 0.48 mil. m^3 in 2002–2012 and the average consumption of which in the same period amounted to 0.34 mil. m^3 (Fig. 5). The anticipated mean annual supply of broadleaved pulpwood in 2013–2032 is also markedly higher (0.65 mil. m^3) than the long-term production and consumption.

CONCLUSIONS

Based on the performed analyses we can state that the total mean annual model outlook of logging perspectives derived from the current database of forest management plans and guidelines for the period 2013–2032 in commercially exploitable forests amounts to 15.51 mil. m^3. The amount corresponds to the production of timber in the Czech forests in 2011 and 2012, i.e. in the period with the low occurrence of incidental felling.

The mean annual model outlook of logging perspectives for softwood in the period 2013–2032 in commercially exploitable forests amounts to 13.02 mil. m^3 and is lower by more than 1 mil. m^3 as compared with the long-term average calculated for the period 2002–2012. The decrease corresponds to the felling volumes of softwood realized in 2011 and 2012. The presumed decrease of softwood felling will result mainly from the decreased felling of spruce (on average by 0.9 mil. m^3 per year). The increased felling of other conifers may compensate for the expected decrease in the volume of spruce timber felling.

The average percentage proportions of the respective assortments in the CSO and MoA sta-

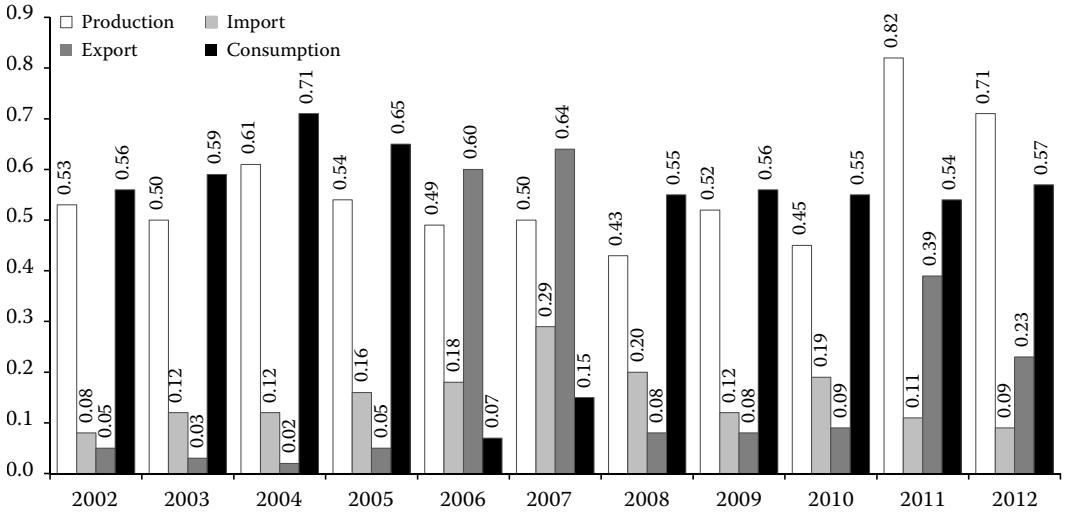

Fig. 4. Development of the consumption of broadleaved round wood in 2002 –2012 (Ministry of Agriculture of the Czech Republic rok 2003–2013)

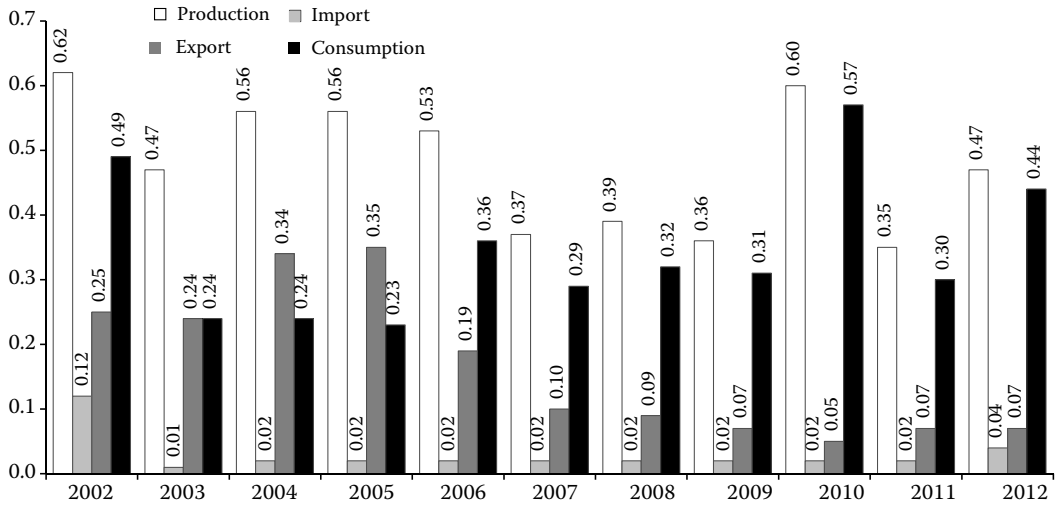

Fig. 5. Development of the consumption of broadleaved pulpwood 2002–2012 (Ministry of Agriculture of the Czech Republic rok 2003–2013)

tistics for the period 2002–2012 suggest that the mean annual supply of coniferous round wood, coniferous pulpwood and coniferous fuel wood should amount to 7.73, 4.16 and 2.12 mil. m^3, respectively, in the next two decades.

The model mean annual outlook of hardwood logging perspectives for the period 2013–2032 in the commercially exploitable forests amounts to 2.5 mil. m^3, which is by 0.9 mil. m^3 more as compared with the long-term average calculated for the years 2002 to 2012. Thus, the current felling volume of hardwood can be increased in the period to come.

Based on the average percentage shares of the respective assortments according to the CSO and MoA statistics for the period 2002–2012, the mean annual supplies of broadleaved round wood, broadleaved pulpwood and broadleaved fuel wood are to be expected at 0.8, 0.65 and 0.98 mil. m^3, respectively, in the next two decades.

The next study of logging perspectives should be carried out in 2016 after finishing the second cycle of the National Forest Inventory because up-to-date data on forest resources in the Czech Republic will be available at that time.

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